HIGH/LOW WORK FUNCTION METAL ALLOYS FOR INTEGRATED CIRCUIT ELECTRODES AND METHODS OF FABRICATING SAME

Abstract of the Disclosure

Integrated circuit electrodes include an alloy of a first metal and a second metal having lower work function than the first metal. The second metal also may have higher oxygen affinity than the first metal. The first metal may be Ru, Ir, Os, Re and alloys thereof, and the second metal may be Ta, Nb, Al, Hf, Zr, La and alloys thereof. Both NMOS and the PMOS devices can include gate electrodes of an alloy of the first metal and the second metal having lower work function than the first metal. The PMOS gate electrode may have a higher percentage of the first metal relative to the second metal than the NMOS gate electrode. Thus, a common material system may be used for gate electrodes for both NMOS and PMOS devices.